



Managing Tools

Explanation on beas Tools Master Data

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1. INTRODUCTION

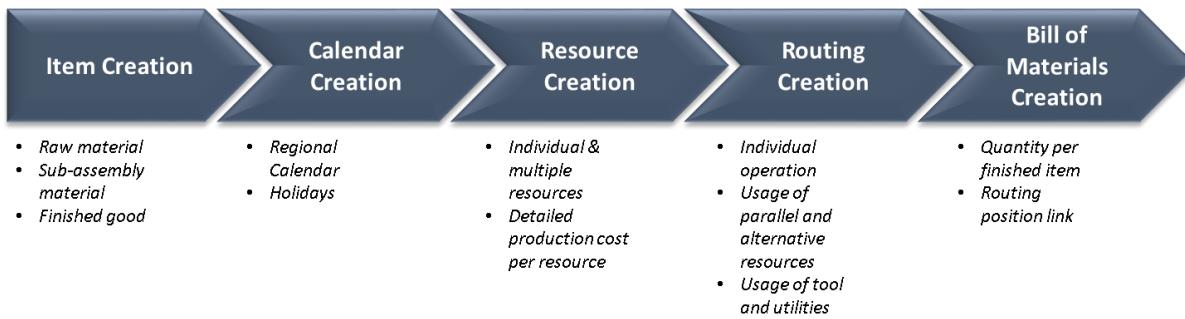
Tools are accessories that can, sometimes, be required to perform an Operation. Tools can affect the routing positions in many aspects. For example, tools can:

- Increase the cost of Operation
- Limit production capacity if the tool is in use and is required for another Operation
- Change the production time when tools can make the process faster or slower or when tools can process a different number of products at the same time

Utilities, on the other hand, are simplified tools that cannot limit the production capacity nor change the production time.

2. PROCESS

To navigate through tool master data, it is essential to follow the correct flow of the process: “**Building an Item Structure**”



So far, we have answered the following questions. Firstly: “What are we producing?” in the Item Master Data Tutorial, secondly: “When are we producing?” documented in the Calendar Master Data Tutorial, and thirdly: “Where are we producing?” documented in the Resources Master Data Tutorial.

Tools will also help us answer the fourth question regarding the manufacturing process which is: “*How are we producing?*”

This question involves two concepts: routings where we define productivity per resource, setup times, parallel or alternative resources, and bill of materials where we define the recipe or the list of component parts to produce the finished good or sub-assembly. This last concept will be detailed in another tutorial.

Tools depend directly on routings because it is the only way to assign tools to an operation in order to produce an item.

PATH: Inventory > Tool Administration > Create

2.1. Header

In the Header area of the screen you can find general information about the tool:

Tool Administration

Tool	Mixer	Type	Tool
Description	Mixer		
Active	<input checked="" type="checkbox"/>	Block availability	<input type="checkbox"/> To <input type="text"/>
<input type="button" value="General"/> <input type="button" value="Scheduling"/> <input type="button" value="Graphic"/> <input type="button" value="Cost"/> <input type="button" value="Bill of Materials"/> <input type="button" value="Interruption"/> <input type="button" value="Maintenance orders"/> <input type="button" value="Attachments"/> <input type="button" value="Documents"/>			

Tool: Field used to name the tool or utility to be created.

Type: Field used to specify the type of master data. The field *Type* will always come automatically filled with "Tool" when creating a Tool and with "Utility" when creating a Utility.

Description: Field used for description of the tool or utility to be created.

Active: Field used to set to active the tool for selection at productions operations.

2.2. General Tab

The following tab includes fields related to the manufacturing process:

Tool Administration

Tool	Mixer	Type	Tool
Description	Mixer		
Active	<input checked="" type="checkbox"/>	Block availability	<input type="checkbox"/> To <input type="text"/>
<input type="button" value="General"/> <input type="button" value="Scheduling"/> <input type="button" value="Graphic"/> <input type="button" value="Cost"/> <input type="button" value="Bill of Materials"/> <input type="button" value="Interruption"/> <input type="button" value="Maintenance orders"/> <input type="button" value="Attachments"/> <input type="button" value="Documents"/>			
Drawing number	<input type="text"/>		
Type	<input type="text"/>		
Customer	<input type="text"/>	Warehouse	<input type="text"/> 01
Project	<input type="text"/>	Bin Location	<input type="text"/>
Use factor by (shot/pass)	<input type="text"/> 1	<input type="checkbox"/> Capacity planning <input type="checkbox"/> Defines lead time <input type="checkbox"/> Selectable at time receipt	<input checked="" type="checkbox"/>
Remarks	<input type="text"/>		
<input type="button" value="Item number"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Delete"/> <input type="button" value="Reference"/>			

Use Factor by (Shot/Pass): Field used to determine how many parts this tool produces at each use.

Example: The production of plastic injected parts, where the mold used to produce the parts (which is the tool) can have multiple cavities to create several parts at the same time. If the mold has 5 cavities, this means it can generate 5 items at each use, the number 5 should be filled at the *Use factor by (shot/pass)* field. If the tool will be used to determine the production times, you can click on the button right next to *Use factor by (shot/pass)* field to update the changes in this field into all existing routings and work orders.

IMPORTANT: This field is only available for tools, not for utilities.

Warehouse: Field used to specify a warehouse for the tool. The information at this field will not change any of the transactions created by the tool. This can be set to be used by default in the configuration wizard. For more information about this setting, please go to the [Configuration Wizard](#).

Quantity Tools: Field used to set a quantity for the tool.

IMPORTANT: For the tool to be used in capacity planning, the value in *Quantity Tool* cannot be greater than "1", and each tool should be registered separately.

Capacity Planning: Field used to enable the capacity planning information. It will display an additional tab named *Scheduling*. If this option is unchecked, the tool is not considered in the capacity planning process.

IMPORTANT: This field is only available for tools, not for utilities.

Defines Lead Times: Field used to make the tool responsible for defining lead times, instead of the resource. Using a specific tool can change the time the resource needs to be set up or to complete a production operation.

IMPORTANT: This field is only available for tools, not for utilities.

2.3. Scheduling Tab

This tab is only visible if the *Capacity Planning* field is checked on the *General Tab*.

In the *Scheduling* tab it allows the setup of master data related to production and capacity planning.

The screenshot shows the 'Tool Administration' window with the 'Scheduling' tab selected. The window has a title bar 'Tool Administration' and a toolbar with buttons for 'Update', 'Cancel', 'Delete', 'Reference', and 'Counter Status'. The main area contains a table with columns 'Tool', 'Type', and 'Tool'. Under 'Tool', there are rows for 'Mixer' and 'Mixer'. Under 'Type', there is a row for 'Mixer'. Below the table are checkboxes for 'Active' (checked), 'Block availability' (unchecked), and 'To' (dropdown menu). At the bottom left are checkboxes for 'View in APS' (checked) and 'Consider resource limits' (unchecked).

View in APS: This field can be enabled when using the APS module. Doing this will make the tool available in the APS view. If you don't want to see the tool, you can disable the field.

2.4. Cost Tab

This tab is used for registering all the information related to the cost of the tool, including acquisition and maintenance values, as well as the configuration for accounting purposes.

IMPORTANT: This tab is only available for tools, not for utilities.

The screenshot shows the 'Tool Administration' window with the 'Cost' tab selected. The tool is identified as 'Mixer'. The 'Active' checkbox is checked. Under the 'Cost' tab, there are several input fields: 'Date of Purchase' (07/27/17), 'Supplier' (SUPP1), 'Manufacturer' (Star Manufacturer), 'Purchased Price' (0.00), 'Cost element for buy' (dropdown menu), 'Cost input in' (Quantity), 'Product life in units' (0), 'Maintenance Costs' (0.00 Per Uo 0), and 'Cost Element for Maintenance' (dropdown menu). Below these fields are two buttons: 'Remark' and 'Variation cost'. At the bottom of the window are four buttons: 'Update' (highlighted in yellow), 'Cancel', 'Delete', and 'Reference'.

Purchased Price: Field used to set the purchase or production price in local currency.

Cost Element for Buy: Field used to define the cost element to be used for the Purchased Price. For more information, please refer to *Work Order: Accounting* tutorial. A default value for this field can be set in the Configuration Wizard. For more information about this setting, please go to the [Configuration Wizard](#).

Cost Input In: Field used to select if the tool will depreciate according to the number of units produced or according to hours of use.

The standard configuration for *Cost Input In* is "Quantity". By selecting "Quantity", the tool will depreciate according to the number of parts produced.

By selecting "Time" in *Cost Input In*, the field *Product Life in Units* will change to *Product Life in Hr.*, and the tool will depreciate according to the number of hours that it is used.

Product Life in Units: Field used to specify the maximum number of parts that the tool can produce or the number of hours for the full depreciation.

beas will calculate the depreciation of the tool in the following way when *Cost input in* is equal to "Quantity":

$$[(\text{Purchased Price} / \text{Product Life in Units}) * \text{Quantity Produced}]$$

beas will calculate the depreciation of the tool in the following way when *Cost Input in* is equal to "Time":

$$[(\text{Purchased Price} / \text{Product Life in Hr.}) * \text{Hours Registered in Time Receipt}]$$

Maintenance Costs: Field used for increasing the value of the produced parts. The maintenance cost is linked to the way in which the depreciation of the tool is calculated.

If the tool is depreciated by produced parts, the maintenance costs should correspond to the costs of maintaining the tool after the production of a specific number of products in the field *Per UoM*.

If the tool is depreciated by hours of use, the *Maintenance Costs* disappears. Costs are now specified for each unit of time defined in the field *Cost Per* at the fields *Marginal Cost* and *Full Cost*.

Per UoM: Field used to set the quantity of produced items in order to calculate the maintenance costs.

IMPORTANT: If the field *Cost Input In* is set as "Time", the field will change to *Cost Per*.

Date of Purchase	07/27/17
Supplier	SUPP1
Manufacturer	Star Manufacturer
Purchased Price	0.00
Cost element for buy	
Cost input in	Time
Product life in hr..	
Cost per	Hour
Marginal Cost	0
Full Cost	0
Cost Element for Maintenance	

Cost Element for Maintenance: Field used to define the cost element to be used for the maintenance costs. For more information, please refer to *Work Order: Accounting* tutorial. A default value for this field can be set at the Configuration Wizard. For more information about this setting, please go to the [Configuration Wizard](#).

At the bottom of the screen, there are two tabs used for information **only**:

2.5. Interruption Tab

In this tab, beas allows the user to set up interruptions to the tool during production processes. This will be considered in production planning and execution. For more information about interruptions, please refer to *Interruptions* tutorial.

2.6. Maintenance orders Tab

In this tab, beas allows the user to list and manage the maintenance orders linked to the tool. If there is no maintenance plan in place, beas allows the user to create a maintenance plan definition. For more information, please refer *Maintenance* tutorial.

3. FIELD GUIDE

Here, all fields from tool master data are described.

PATH: Inventory > Tool Administration > Create

3.1. Header

In the Header area of the screen you can find general information about the tool:

The screenshot shows the 'Tool Administration' dialog box with the 'General' tab selected. The 'Tool' field contains 'Mixer', the 'Type' field contains 'Tool', and the 'Description' field also contains 'Mixer'. The 'Active' checkbox is checked. Below the tabs, there are several buttons: General, Scheduling, Graphic, Cost, Bill of Materials, Interruption, Maintenance orders, Attachments, and Documents.

Tool: Field used to name the tool or utility to be created.

Type: Field used to specify the type of master data. For more information, please refer to *Type*.

Description: Field used for description of the tool or utility to be created.

Active: Field used to set to active the tool for selection at productions operations.

Block Availability: Field used to block the tool for selection at productions operations on a specific date.

To: Field used to set the date for the *Block Availability* field.

3.2. General Tab

The following tab includes fields related to the manufacturing process:

This screenshot shows the 'Tool Administration' dialog box with the 'General' tab selected, similar to the previous one but with more fields visible. The top section remains the same. Below it, there are additional fields: 'Drawing number' (empty), 'Type' (empty), 'Customer' (dropdown menu), 'Project' (dropdown menu), 'Warehouse' (dropdown menu, value '01'), 'Bin Location' (dropdown menu), 'Quantity Tools' (dropdown menu, value '1'), 'Use factor by (shot/pass)' (dropdown menu, value '1'), and three checkboxes under 'Capacity planning': 'Capacity planning' (checked), 'Defines lead time' (checked), and 'Selectable at time receipt' (unchecked). At the bottom, there are buttons for 'OK', 'Cancel', 'Delete', and 'Reference'.

Drawing Number: Field used to add the technical drawing number. This field can be used for filtering and searching in several beas screens.

Type: Field used to specify a type for the tool, which will only be used as an additional information for reporting and organizing them.

Customer: Field used to select a business partner if the tool belongs to a customer, was sent to a provider, or is used to manufacture parts that will be sold to a specific customer.

Project: Field used to select a project in case the tool belongs to a specific project.

Use Factor by (Shot/Pass): Field used to determine how many parts this tool produces at each use. For more information, please refer to *Use Factor by (Shot/Pass)*.

Remarks: Field used to include additional information, if applicable.

Warehouse: Field used to specify a warehouse for the tool. For more information, please refer to *Warehouse*.

Bin Location: Field used only if no item number has been stored. An inventory location can also be stored here without accessing the inventory management. The information in this field will not change any of the transactions created by the tool.

Quantity Tools: Field used to set a quantity for the tool.

Capacity Planning: Field used to enable the capacity planning information. For more information, please refer to *Capacity Planning*.

Defines Lead Times: Field used to make the tool responsible for defining lead times, instead of the resource. For more information, please refer to *Define Lead Times*.

Selectable at Time Receipt: Field used to allow the tools to be selectable when creating a time receipt. This will influence the maintenance counters. For more information, please refer to *Maintenance* tutorial. This field is enabled only if *Defines Lead Time* is checked.

IMPORTANT: This field is only available for tools, not for utilities.

Item Number: Field used to set an item that should be produced in parallel to the tool. This is used only for information.

3.3. Scheduling Tab

This tab is only visible if the *Capacity Planning* field is checked on the *General Tab*.

In the *Scheduling* tab, it allows the setup of master data related to production and capacity planning.

Tool Administration

Tool	Mixer	Type	Tool
Description	Mixer		
Active	<input checked="" type="checkbox"/>	Block availability	<input type="checkbox"/>
<input type="text"/> To <input type="button" value="▼"/>			

General Scheduling Graphic Cost Bill of Materials Interruption Maintenance orders Attachments Documents

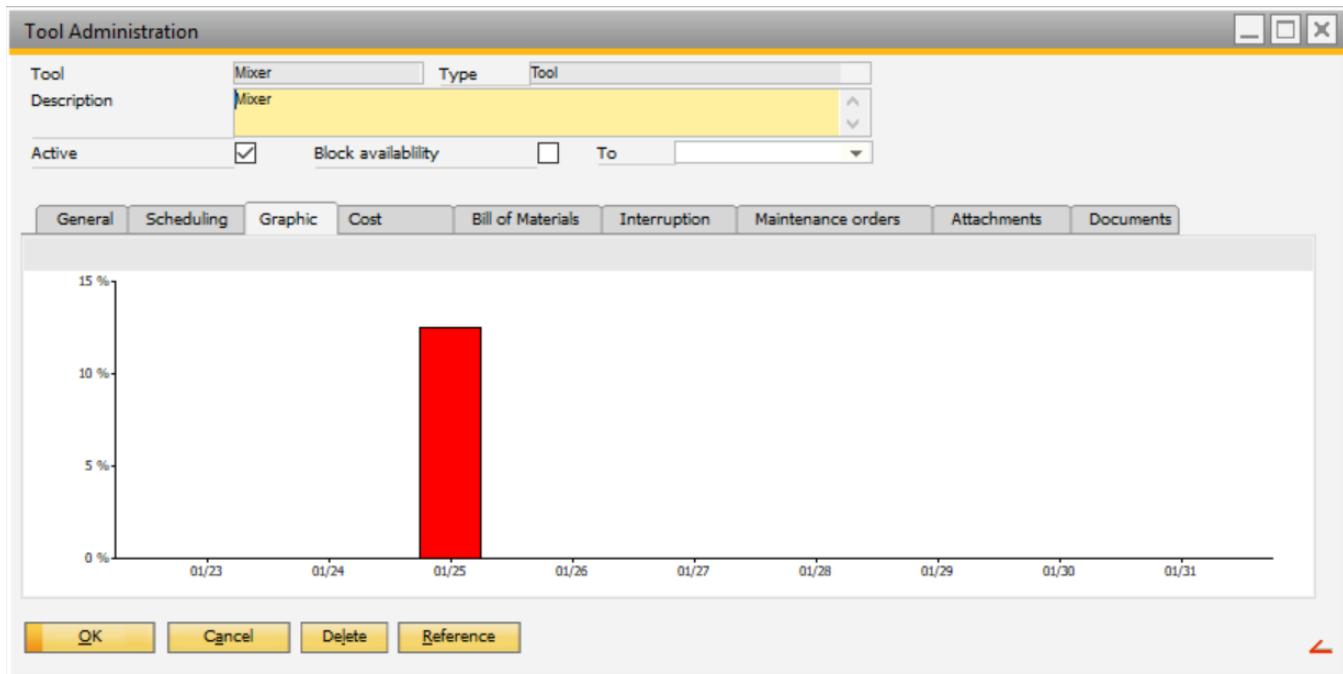
View in APS
 Consider resource limits

View in APS: This field can be enabled when using the APS module. Doing this will make the tool available in the APS view. If you don't want to see the tool, you can disable the field.

Consider resource limits: This field is used to consider the resource limits when planning the production for the tool. For more information about how tools are displayed in APS, please refer to *APS tutorial*.

3.4. Graphic Tab

If the tool is relevant for *Capacity Planning*, it is possible to view the occupation of the tool's capacity on a timeline. This tab is only visible if the *Capacity Planning* field is checked on the *General Tab*.



To view the occupation, you can link the tool to a *Routing* position, and after a work order is created with it, access the *Graphic* tab at the *Tool Administration* screen. In the *Graphic* tab, you will be able to display the tool's used capacity against the total capacity on a daily view.

APS calculation can influence the data displayed in the *Graphic* tab by redistributing the production according to the resource capacity and tools' availability.

3.5. Cost Tab

This tab is used for registering all the information related to the cost of the tool, including acquisition and maintenance values, as well as the configuration for accounting purposes.

IMPORTANT: This tab is only available for tools, not for utilities.

The screenshot shows the 'Tool Administration' dialog box with the 'Cost' tab selected. At the top, there is a search bar with 'Mixer' entered and dropdown menus for 'Type' and 'Tool'. Below this, there are checkboxes for 'Active' and 'Block availability', and a dropdown for 'To'. The main area contains several input fields: 'Date of Purchase' (07/27/17), 'Supplier' (SUPP1), 'Manufacturer' (Star Manufacturer), 'Purchased Price' (0.00), 'Cost element for buy' (Quantity), 'Cost input in' (Quantity), 'Product life in units' (0), 'Maintenance Costs' (0.00 Per Unit 0), and 'Cost Element for Maintenance' (dropdown). At the bottom, there are buttons for 'Remark' and 'Variation cost', and a large text area for notes. The footer has buttons for 'Update', 'Cancel', 'Delete', and 'Reference'.

Date of Purchase: Field used to specify the date on which the tool was purchased from the manufacturer.

Supplier: Field used to assign the supplier of the tool.

Manufacturer: Field used to add information from the manufacturer. This is for information only, no further action in BEAS.

Purchased Price: Field used to set the purchase or production price in local currency.

Cost Element for Buy: Field used to define the cost element to be used for the Purchased Price. For more information, please refer to *Cost Element for Buy*.

Cost Input In: Field used to select if the tool will depreciate according to the number of units produced or according to hours of use. For more information, please refer to *Cost Input In*.

Product Life in Units: Field used to specify the maximum number of parts that the tool can produce or the number of hours for the full depreciation. For more information, please refer to *Product Life in Units*.

Maintenance Costs: Field used for increasing the value of the produced parts. For more information, please refer to *Maintenance Costs*.

Per UoM: Field used to set the quantity of produced items in order to calculate the maintenance costs.

The screenshot shows a software interface with a navigation bar at the top. The 'Cost' tab is selected. Below the tabs, there are several input fields: 'Date of Purchase' (07/27/17), 'Supplier' (SUPP1), 'Manufacturer' (Star Manufacturer), 'Purchased Price' (0.00), 'Cost element for buy' (dropdown), and 'Cost input in' (Time, highlighted with a red box). To the right of these, there is a group of fields: 'Product life in hr..' (0), 'Cost per' (Hour, dropdown), 'Marginal Cost' (0), and 'Full Cost' (0). A 'Cost Element for Maintenance' dropdown is also present. The entire 'Cost per' group is highlighted with a red box.

Cost Element for Maintenance: Field used to define the cost element to be used for the maintenance costs. For more information, please refer to *Cost Element for Maintenance*.

At the bottom of the screen, there are two tabs used for information **only**:

Remarks: Field used to include additional information, if applicable.

Variation Cost: Field used to input additional information for costs. In this tab, beas allows the user to manage all variation costs defined.

IMPORTANT: This is for information only; it will not have effect on beas' functionality.

New: Button used to create a new variation cost.

Delete: Button used to delete a variation cost.

When creating a cost, a new row is displayed:

Remark	Variation cost
Message	Amount Originator
Shipping	5.00 Repair in Manufacturer
New	Delete

Message: Field used to name the additional cost.

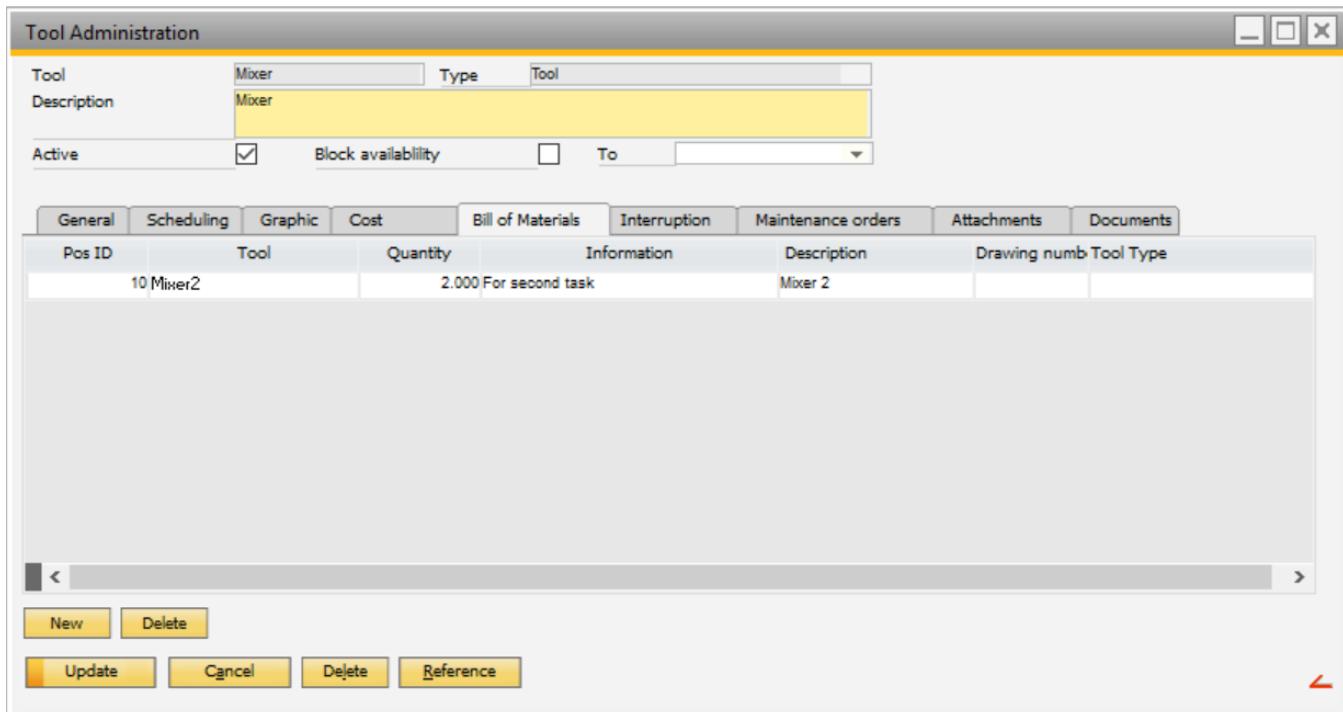
Amount: Field used to set the cost amount.

Originator: Field used to include additional information about who originated this cost. For example, repair or customer request.

3.6. Bill of Materials Tab

Sometimes, a tool can be composed by other tools, like a group of several auxiliary tools. In this tab, beas allows the user to include additional tools to be used during production processes.

IMPORTANT: Auxiliary tools are not considered in cost calculation nor in capacity planning.



IMPORTANT: This tab is only available for tools, not for utilities.

New: Button used to create a new Bill of Materials (BOM) position.

Delete: Button used to delete a BOM position.

When creating a BOM position, a new row is displayed.

Pos ID: Field used to set the position number. This field is counted in increments of 10, by default.

Tool: Field used to select the tool to be added.

Quantity: Field used to specify the quantity needed by this tool.

Information: Field used to include additional information, if applicable.

Description: Field used to insert a description of the tool. By default, this field brings the description from the tool selected.

Drawing Number: Field used to add the technical drawing number. For more information, please refer to *Drawing Number* field in the *General* tab.

Tool type: Field used to specify a type for the tool. For more information, please refer to *Type* field in the *General* tab.

3.7. Interruption Tab

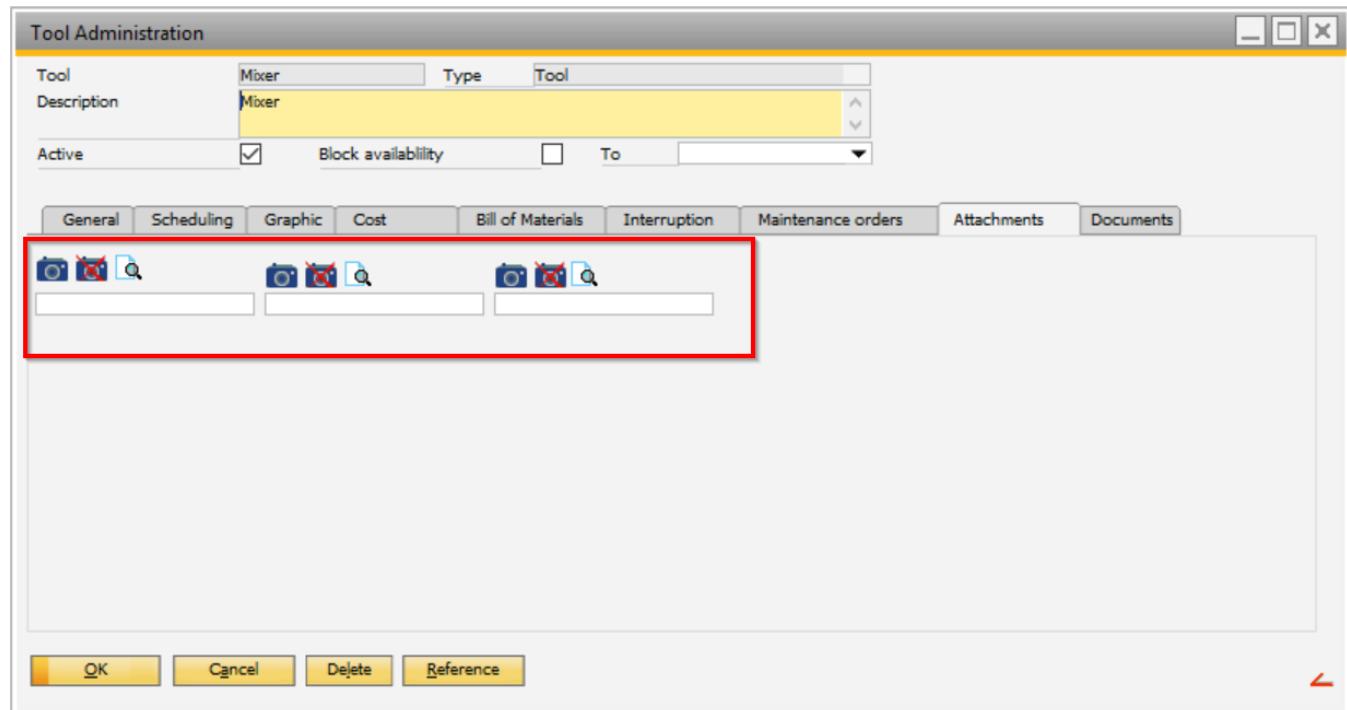
In this tab, BEAS allows the user to set up interruptions to the tool during production processes. This will be considered in production planning and execution. For more information about interruptions, please refer to *Interruptions* tutorial.

3.8. Maintenance orders Tab

In this tab, beas allows the user to list and manage the maintenance orders linked to the tool. If there is no maintenance plan in place, beas allows the user to create a maintenance plan definition. For more information, please refer *Maintenance* tutorial.

3.9. Attachment Tab

The Attachments tab is used to attach images and documents to the tools.



Only three files can be attached, one file per field. Right next to each field, there are three buttons:

- The camera button enables the user to select a picture or document to attach.
- The camera marked with an "X" button removes the attachment.
- The document with a magnifying glass opens the attachment.

All attachments included in this tab will be available at the FDC Terminal. For more information about the FDC Terminal, please refer to *Terminal* tutorial.

3.10. Documents Tab

In this tab, it is possible to attach any number of documents into the Tool Master Data.

Tool Administration

Tool	Mixer	Type	Tool												
Description	Mixer														
Active	<input checked="" type="checkbox"/>	Block availability	<input type="checkbox"/> To <input type="text"/>												
<input type="button" value="General"/> <input type="button" value="Scheduling"/> <input type="button" value="Graphic"/> <input type="button" value="Cost"/> <input type="button" value="Bill of Materials"/> <input type="button" value="Interruption"/> <input type="button" value="Maintenance orders"/> <input type="button" value="Attachments"/> <input type="button" value="Documents"/>															
<table border="1"> <thead> <tr> <th>Info</th> <th>Version</th> <th>Cross Reference</th> <th>Available</th> <th>Entry From</th> <th>Entry on</th> </tr> </thead> <tbody> <tr> <td>Fields</td> <td></td> <td>Server directory where file is located</td> <td><input type="checkbox"/></td> <td>manager</td> <td>02/15/18</td> </tr> </tbody> </table>				Info	Version	Cross Reference	Available	Entry From	Entry on	Fields		Server directory where file is located	<input type="checkbox"/>	manager	02/15/18
Info	Version	Cross Reference	Available	Entry From	Entry on										
Fields		Server directory where file is located	<input type="checkbox"/>	manager	02/15/18										
<input type="button" value="Edit"/> <input type="button" value="New"/> <input type="button" value="Delete"/> <input type="button" value="Open"/> <input type="button" value="Update"/> <input type="button" value="Cancel"/> <input type="button" value="Delete"/> <input type="button" value="Reference"/>															

It is possible to insert several positions with different kinds of documents like PDF, Excel or Word. To attach a new document:

- a. Click on New

Documents

Info	<input type="text"/>
Version	<input type="text"/>
Cross Reference	<input type="text"/>
Entry From	<input type="text"/> On <input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Cancel"/> <input type="button" value="Delete"/> <input type="button" value="open"/>	

Click on the *Cross Reference* field to select the attachment. An Explorer window opens where you can choose the document. Once you have linked it, you can display or print it later in your production process.

To remove an attachment:

- a. Select the attachment you wish to remove
- b. Click on the *Delete* button

Attachments can be viewed by clicking the *Open* button in the document tab.

IMPORTANT: In order for every SAP user to have access to the attachments, it is necessary to place the attachments in a shared folder and give the users rights to access the folder. beas only creates a link to the attached file.

4. CONFIGURATION WIZARD

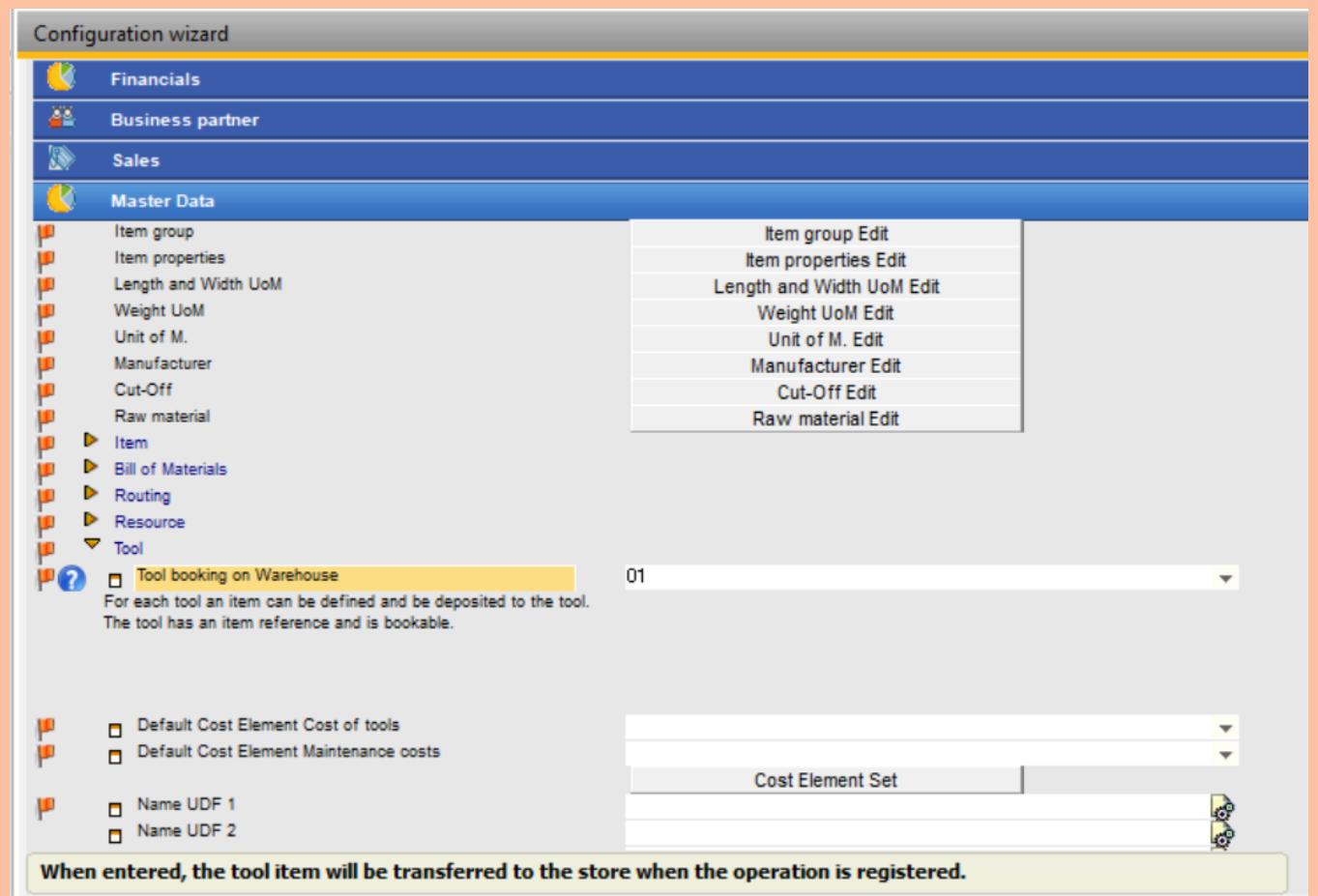
This section includes each configuration wizard setup and special parameters that involve fields or business scenarios from the tool administration.

4.1. Header

Warehouse:

Configuration Wizard: This parameter allows the user to set the default warehouse for the tool.

PATH: Master Data > Tool > Tool booking on Warehouse



4.2. Cost Tab

Cost Element for Buy:

Configuration Wizard: This parameter allows the user to define the default value for the cost element of the tool.

PATH: Master Data > Tool > Default Cost Element Cost of Tool

Configuration wizard

Master Data

- Item group
- Item properties
- Length and Width UoM
- Weight UoM
- Unit of M.
- Manufacturer
- Cut-Off
- Raw material
- Item
- Bill of Materials
- Routing
- Resource
- Tool

Tool booking on Warehouse

Default Cost Element Cost of tools

Default Cost Element Maintenance costs

Cost Element Set

Cost Element for Maintenance:

Configuration Wizard: This parameter allows the user to define the default value for maintenance costs.

PATH: Master Data > Tool > Default Cost Element Maintenance Costs

Master Data

- Item group
- Item properties
- Length and Width UoM
- Weight UoM
- Unit of M.
- Manufacturer
- Cut-Off
- Raw material
- Item
- Bill of Materials
- Routing
- Resource
- Tool

Tool booking on Warehouse

Default Cost Element Cost of tools

Default Cost Element Maintenance costs

Cost Element Set